

ABSTRACT

A method for manufacturing semiconductor device according to the present invention comprises a first film forming step of forming, on a concave and convex portion formed by an element on a semiconductor substrate, an oxidation preventive layer which prevents permeation of moisture into the element; a second film forming step of forming, on this oxidation preventive layer, an expansion layer which can be oxidized and expanded by a heat treatment in an oxidation atmosphere; a third film forming step of forming, on this expansion layer, an insulating film which can be fluidized by the heat treatment in the oxidation atmosphere; and an expansion step of subjecting, to the heat treatment in the oxidation atmosphere, the semiconductor substrate on which the oxidation preventive layer, the expansion layer and the insulating film have been formed, to fluidize the insulating film and to oxidize and expand the expansion layer, thereby eliminating bubbles generated in the insulating film.